

Replaced By  
INT 91 ANDT

Having thus described the invention, what is claimed is:

1. A tool rig for the compaction of particulate materials, comprising:  
a base;  
a cylinder block disposed on the base;  
at least two pistons disposed within the cylinder block, wherein one piston is at least partially disposed within one other piston; and  
means for connecting an energy supply to at least one of the pistons from the inner diameter of at least one of the pistons.
2. The tool rig of claim 1, wherein the means for connecting an energy supply includes a supply component that defines at least one channel.
3. The tool rig of claim 2, wherein the base defines at least one channel that is in communication with the at least one channel defined by the supply component.
4. The tool rig of claim 2, wherein the supply component defines a central bore.
5. The tool rig of claim 4, further comprising an additional piston that is disposed within the central bore.
6. The tool rig of claim 1, wherein the at least two pistons are concentric.

7. The tool rig of claim 1, wherein the cylinder block includes at least two cylinders, and wherein each cylinder includes one of the at least two pistons.

8. The tool rig of claim 1, further comprising at least two connecting lateral pistons at least partially contained within the cylinder block, to connect at least one platen to the cylinder block.

9. The tool rig of claim 1, further comprising at least one linear encoder disposed in the base.

10. The tool rig of claim 1, further comprising a mechanical stop for at least one of the pistons.

11. The tool rig of claim 10, wherein the mechanical stop is adjustable.

12. The tool rig of claim 11, wherein the mechanical stop includes an inner ring with an external thread that connects to an internal thread of an outer ring, whereby the stop is adjusted by rotation of the outer ring.

13. A tool rig for the compaction of particulate materials, comprising:  
a base;  
a cylinder block disposed on the base;

at least two pistons disposed within the cylinder block, wherein one piston is at least partially disposed within one other piston; and

a supply component disposed in the inner diameter of at least one piston that defines at least two channels, wherein one channel provides an energy supply to one piston and one other channel provides an energy supply to one other piston.

14. The tool rig of claim 13, wherein at least two of the pistons are on essentially the same level.

15. The tool rig of claim 14, wherein at least one piston is on a different level from the at least two pistons that are on essentially the same level.

16. The tool rig of claim 13, wherein the supply component defines a central bore.

17. The tool rig of claim 16, wherein one piston is disposed within the central bore.

18. The tool rig of claim 13, further comprising at least one linear encoder disposed in the base.

19. The tool rig of claim 13, further comprising a mechanical stop for at least one of the pistons.

20. The tool rig of claim 19, wherein the mechanical stop is adjustable.
21. The tool rig of claim 20, wherein the mechanical stop includes an inner ring and an outer ring, whereby the stop is adjusted by rotation of the outer ring.
22. A press for the compaction of particulate materials, comprising:  
a frame; and  
a tool rig for the compaction of particulate materials connected to the frame, including a base, a cylinder block disposed on the base, at least two pistons disposed within the cylinder block, wherein one piston is at least partially disposed within one other piston, and means for connecting an energy supply to at least one of the pistons from the inner diameter of at least one of the pistons.
23. The press for the compaction of particulate materials of claim 22, wherein the means for connecting an energy supply include a supply component that defines at least one channel, whereby the channel connects an energy supply to at least one of the pistons.
24. The press for the compaction of particulate materials of claim 22, wherein the tool rig is integrally connected to the frame.
25. The press for the compaction of particulate materials of claim 22, wherein the tool rig is removably connected to the frame.

26. The press for the compaction of particulate materials of claim 22, further comprising electric controls.

27. The press for the compaction of particulate materials of claim 22, further comprising hydraulic controls.

28. The press for the compaction of particulate materials of claim 22, further comprising pneumatic controls.